

# BYTE CUMULATIVE INDEX

## September 1975 — December 1981

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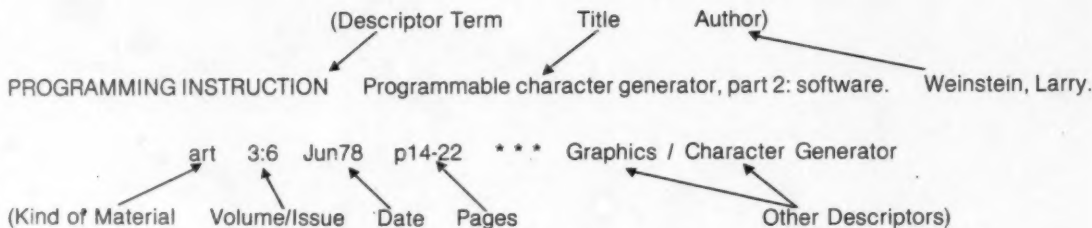
Questions, questions, questions! Well, what do you expect in the age of information? If you've got it, you can be sure there's someone out there looking for it. The real question, then, becomes "How can I find it?"

This month, as a service to our readers, BYTE presents a comprehensive, cumulative index that covers every issue of the magazine, up to and including the one you're holding in your hand. Among the information represented is every article and product review that has appeared in the pages of BYTE for the past 75 issues.

All entries in the index are arranged by subject descriptors, and an article may be listed under several descriptors. Any article for which a correction was published has an asterisk after its title. The correction can be found under the heading "BYTE Corrections." The figure below shows a typical index entry and describes what the different parts mean.

We would like to thank Joseph H Ward Jr, president of Microcomputer Information Services, and his staff for the tremendous effort they put into preparing this index. For those who require information beyond what is presented here, MIS publishes *Microcomputer Index*, which covers 20 microcomputer-oriented magazines and includes abstracts for each entry. *Microcomputer Index* will also be going online early next year (1982) as part of Lockheed's Dialog system. For those who need information fast, it will feature all the search capabilities of that system. For more information on the *Microcomputer Index*, you can reach MIS by calling (408) 241-8381.

### Index Entry:



### Key to Abbreviations

art ..... article  
 br ..... book review  
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 let ..... letter  
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 \* ..... see BYTE Corrections  
 \*\*\* ..... marker symbol for other descriptors

L1 ..... program listing in BASIC  
 L2 ..... program listing in machine language  
 L3 ..... program listing in assembly language  
 L4 ..... program listing in FORTRAN  
 L5 ..... program listing in COBOL  
 L6 ..... program listing in Pascal  
 L7 ..... program listing in FORTH  
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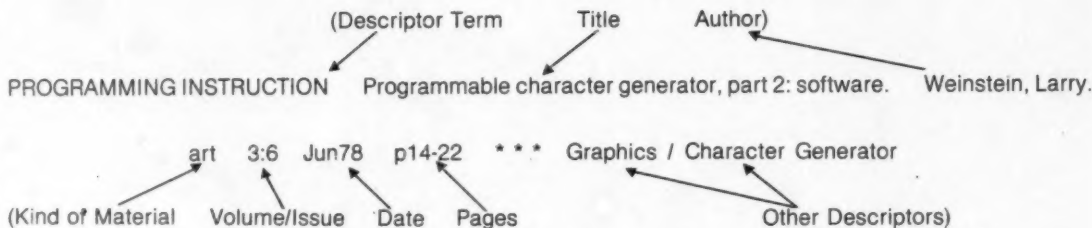
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Microprocessor based analog/digital conversion. Frank, Roger. art 1:3 May76 p70-73 \*\*\* Digital/Analog Circuit / Hardware Construction

Mind over matter: add biofeedback input for your computer. Ciarcia, Steve. col 1:1 Aug79 p49-58 \*\*\* Health / Analog/Digital Circuit / Hardware Construction

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Time in and turn on, part 2: an AC wireless remote control system. Ciarcia, Steve. col 3:5 May78 p97-102 \*\*\* Hardware Construction / Home

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Dateline (converts object code to BASIC data statements). Hunt, Daniel. col L1 6:3 Mar81 p216-222 \*\*\* BASIC / Utility Program / 50L

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L2 4:8 Aug79 p82-84 \*\*\* TRS-80 Model I /  
Programming Instruction / Z-80  
Fast line-drawing technique. Higgins, Mike. col  
L1 6:8 Aug81 p414-416 \*\*\* Programming  
Instruction  
Graphic manipulations using matrices.  
Hungerford, Joel. art L1 3:9 Sep78  
p156-165 \*\*\* Programming Instruction /  
Three-Dimensional Graphics  
Graphics fundamentals. Sandifur, Kathleen. art  
L9 6:10 Oct81 p284-300 \*\*\* Programming  
Instruction / Hewlett-Packard  
Graphics in depth: 3-D adds a new dimension to  
your display. Walters/Harris. art L1 3:5  
May78 p16-18 \*\*\* Programming Instruction /  
Three-Dimensional Graphics  
How to implement Space War (or using your  
oscilloscope as a telescope). Kruglinski,  
Dave. art L3 2:10 Oct77 p86-111 \*\*\*  
Games / Programming Instruction / Arcade  
Programmable character generator, part 2:  
software. Weinstein, Larry. art 3:6 Jun78  
p14-22 \*\*\* Programming Instruction /  
Character Generator  
Smalltalk graphics kernel. Ingalls, Daniel. art  
L9 6:8 Aug81 p168-194 \*\*\* Smalltalk /  
Programming Instruction  
Speeding up TRS-80 graphics. Bobo/Knoderer. art  
L1 6:5 May81 p171-184 \*\*\* Programming  
Instruction / TRS-80 Model I  
Using page two with Apple Pascal turtle graphics.  
Wallace, Bruce. col L6 6:5 May81 p122  
\*\*\* Programming Instruction / Pascal / Apple  
II

### TRS-80 MODEL I

Exploring TRS-80 graphics. Yeager, George. art  
L2 4:8 Aug79 p82-84 \*\*\* TRS-80 Model I /  
Programming Instruction / Z-80

# GRAPHICS (CONTINUED)

General interpolating graphics package for the TRS-80. Cohen/Crowe. art L1 5:11 Nov80 p296-310 \*\*\* TRS-80 Model I / Mathematics / Plotting  
Speeding up TRS-80 graphics. Bobo/Knoderer. art L1 6:5 May81 p71-104 \*\*\* Programming Instruction / TRS-80 Model I

## HAM RADIO

Add this 6800 MORSE to your amateur radio station. Grapel/Henney. art L3 1:14 Oct76 p30-35 \*\*\* Programming Instruction / 6800  
Club computer network. Kasser, Joe. art 5:5 May80 p202-212 \*\*\* Clubs / Networks  
Computer...versus...hand sent morse code. Nickey, William. art 1:14 Oct76 p12-14 \*\*\* Hardware Construction  
Computers and amateur radio. Gipe, Michael. art 1:3 Nov75 p42-45 \*\*\* Federal Government  
Efficient storage of morse character codes. Krakauer, Lawrence. art L3 1:14 Oct76 p36-38 \*\*\* Programming Instruction / Memory  
Ham's application dreams. Hosking, W.J. art 1:14 Oct76 p26-29 \*\*\* Hardware Construction  
If only Sam Morse could see now. Sewell, Wayne. art L3 1:14 Oct76 p42-49 \*\*\* Programming Instruction / 6800 / SWTPC  
Morse code station data handler. Filgate, Bruce. art L3 1:14 Oct76 p52-70 \*\*\* Programming Instruction / 8008  
Morse code trainer. Bernstein, Mark. art L3 4:12 Dec79 p247-249 \*\*\* 6800 / Programming Instruction  
Multibus data network: communicating over VHF radio. Brungling, Robert. art 3:11 Nov78 p120-130 \*\*\* Networks / Multi-user Systems / Data Transmission  
Personal computers in a distributed communications network. Steinmetz, Jeff. art 3:2 Feb78 p80-82 \*\*\* Networks  
Sky's the limit: use ham radio bands for intercomputer communication. Kasser, Joe. art 3:11 Nov78 p46-61 \*\*\* Networks / Data Transmission

## HAMMING CODES

Error checking and correcting for your computer. Walker, Gregory. art 5:5 May80 p250-276 \*\*\* Design / Parity Checking / Error Checking  
Hamming error correcting code. Simble, Michael. art 4:2 Feb79 p180-182 \*\*\* Data Transmission / Parity Checking / Error Checking

## HAND-HELD COMPUTER

Hand-held computer / Byte changes. Morgan, Chris. col 3:1 Jan81 p6-10 \*\*\* Publishing  
Numerical analysis for the TRS-80 pocket computer. Salem, Mike. col L1 6:1 Jan81 p182-184 \*\*\* Mathematics / Fourier Transforms / TRS-80 Pocket Computer  
Panasonic and Quasar hand-held computers. Williams/Meyer. art 6:1 Jan81 p34-45 \*\*\* Hardware Review / Fiction

## HANDICAPPED

Computer speech: an update. Daheke, Mark. col 6:2 Feb81 p6-12 \*\*\* Voice Synthesis  
Handi-writer: a video note pad for the physically handicapped. Battie, Howard. art L1 6:12 Dec81 p474-482 \*\*\* Video Display / TRS-80 Model I / Interface

## HARD DISK DRIVE

Big disks must be managed properly. Rovira, Charles. col 3:6 Jun78 p128-129 \*\*\* Directory of hard-disk manufacturers. art 5:8 Aug80 p146 \*\*\* Manufacturing / Hard-disk explosion: high-powered mass storage for your personal computer. Manuel, Tom. art 5:8 Aug80 p58-70 \*\*\* Hardware Review  
Look at Shugart's new fixed disk drive. Morgan, Chris. art 3:6 Jun78 p174-176 \*\*\* Manufacturing / Types and uses of direct access storage. Hill, Curt. art 2:1 Jan77 p60-65 \*\*\* Floppy Disk Drive / Information Storage / Data Structures

## HARDWARE CONSTRUCTION

8 digit hexadecimal readout. Burns, R.R. art 2:8 Aug77 p114-116 \*\*\* Hexadecimal / LED Display  
A/D and D/A conversion - an inexpensive approach. Nikel, Roger. art 6:2 Feb81 p312-316 \*\*\* Analog/Digital Circuit / Digital/Analog Circuit  
ANSAT-GOLEM-80 (5-100 bus microcomputer project). Kasser, Joe. art 4:9 Sep79 p182-195 \*\*\* Microcomputer System / 5-100 Bus  
APL character generator. Langer, John. art L2 5:9 Sep80 p116-124 \*\*\* APL / Character Generator  
Aargh! (or, how to automate PROM burning without ERL). Helmers, Peter. art 1:8 Apr76 p34-35 \*\*\* PROM  
Add a \$3 light pen to your video display. Webster/Young. art L3 3:2 Feb78 p52-58 \*\*\* Light Pen  
Add a stack to your 8008\*. Chamberlin, Hal. art L3 1:2 Oct76 p52-55 \*\*\* Programming Instruction / 8008  
Add cursor control to your TTY II. McGahee, Thomas. art 2:7 Jul77 p122-123 \*\*\* Video Display / Keyboard  
Add nonvolatile memory to your computer. Clarcia, Steve. col 4:12 Dec79 p36-53 \*\*\* Memory / EROM  
Add this graphics display to your system. Buschbach, Thomas. art 1:15 Nov79 p32-39 \*\*\* High Resolution Graphics / Graphics  
Adding an interrupt driven real time clock. Sneed, James. art L3 2:11 Nov77 p72-74 \*\*\* Clock / 6502

# HARDWARE CONSTRUCTION (CONTINUED)

Answer/Originate mode. Parsons, Ronald. art L3 5:6 Jun80 p24-40 \*\*\* Modem / CP/M  
Anyone know the real time? Clarcia, Steve. col L1 4:8 Aug79 p50-59 \*\*\* Clock  
Assembling a Sphere. Anderson, Bruce. art 1:11 Jul76 p18-20 \*\*\* Microcomputer System / Sphere / Kit Building  
Assembling an Altair 8800. Zarrella, John. art 1:4 Dec75 p78-80 \*\*\* Altair  
Assembling the KIM-3A. Franson, Paul. art 4:2 Feb79 p76-82 \*\*\* Terminal / Kit Building  
Audible interrupts for humans. Douds, Charles. art 2:2 Feb77 p54-58 \*\*\* Sound Effects  
Audible logic test probe. Woodward, James. art 4:12 Jan79 p186-187 \*\*\* Test Equipment / Logic Probe  
Budget building on a bare board. Parker, Dan. art 4:10 Oct79 p206-208 \*\*\* Consumer Information  
Build a TTL pulse catcher. Walde, William. art 1:6 Feb76 p58-60 \*\*\* Test Equipment  
Build a TV readout device for your microprocessor. Suding, Robert. art L3 1:12 Aug76 p66-73 \*\*\* Video Display  
Build a bar-code scanner inexpensively. Bennett, Bradley. art 6:11 Nov81 p62-72 \*\*\* Bar Codes  
Build a keyboard function decoder. Clarcia, Steve. col 3:7 Jul78 p98-103 \*\*\* Keyboard / Input/Output  
Build a low-cost EPROM eraser\*. Gelter, L.B. art 5:4 Apr80 p234-238 \*\*\* EPROM  
Build a low-cost logic analyzer. Clarcia, Steve. col L1 6:4 Apr81 p36-44 \*\*\* Test Equipment  
Build a low-cost, remote data-entry terminal. Clarcia, Steve. col 5:9 Sep80 p26-42 \*\*\* Terminal / Home  
Build a noise-based random number generator. Mayhugh, Terry. col 6:5 May81 p452-456 \*\*\* Random Numbers  
Build a null modem. Haar, Robert. col 4:2 Feb81 p198-200 \*\*\* Modem  
Build a simple digital oscilloscope. DeCaro, Frank. art 4:11 Nov79 p222-226 \*\*\* Test Equipment  
Build a television display. Gantt, C.W. art 1:10 Jun76 p16-21 \*\*\* Video Display  
Build an intelligent EPROM programmer. Clarcia, Steve. col L1 6:10 Oct81 p36-48 \*\*\* EPROM / 28  
Build an octal/hexadecimal output display. Clarcia, Steve. col 3:12 Dec78 p32-39 \*\*\* Hexadecimal / Input/Output  
Build the "Coffee Can Special" EROM eraser. Burybe, Lawrence. art 2:1 Jan77 p91 \*\*\* EPROM  
Build your own Turing machine. Willis, James. art L3 6:4 Apr81 p122-146 \*\*\* Definitions / Computer Instruction / Turing Machines  
Build-it-yourself mode for under \$50\*. Clarcia, Steve. col 5:8 Aug80 p22-38 \*\*\* Modem / Acoustic Coupler  
Built-in TV tester. Christner, Kurt. art 2:1 Jan77 p82-83 \*\*\* Test Equipment  
COSMAC doodler. Duntmann, Jeff. art L2 5:5 May80 p214-224 \*\*\* Graphics / COSMAC / Memory  
Catch bytes with a comparator. MacDonald, Doug. col 5:7 Jul81 p368-370 \*\*\* Test Equipment  
Coincident current ferrite core memories. Jones, James. art 1:11 Jul76 p6-16 \*\*\* Memory / Computer Instruction  
Comments on a prototyping bus / Some comments on the unilocal bus. Stimpson/Heenan. art 2:3 Mar77 p102-103 \*\*\* Standards  
Communicate on a light beam\*. Clarcia, Steve. col 4:5 May79 p32-49 \*\*\* Fiber-optics / Data Transmission  
Computer...versus...hand sent morse code. Nickey, William. art 1:14 Oct76 p12-14 \*\*\* Ham Radio  
Construction of a fourth-generation video terminal, part 1. Wierenga, Theron. art L3 5:8 Aug80 p210-224 \*\*\* Terminal / 8085  
Construction of a fourth-generation video terminal, part 2. Wierenga, Theron. art L3 5:9 Sep80 p126-160 \*\*\* Terminal / 8085  
Dressing up front panels (press on letters). Walters, Don. art 1:6 Feb76 p60 \*\*\* Ease into 16-bit computing, part 2: examining a small multi-user system. Clarcia, Steve. col L3 5:4 Apr80 p40-58 \*\*\* Multi-user Systems / 8008 / Multi-tasking  
Easy-to-use A/D converter. Dagitt, Robert. art L3 6:6 Jun81 p378-383 \*\*\* Analog/Digital Circuit / 6502  
Electric card reader. Schaeffer, Anthony. art 4:2 Feb79 p70-74 \*\*\* Input/Output / Card Reader  
Flameless IC recycling trick. Bondy/Droms. art 1:13 Sep76 p104 \*\*\* Integrated Circuits  
Get your system together (putting equipment in a cabinet). Whitney, John. art 2:12 Dec77 p64  
Getting inputs from joysticks and slide pots. Helmers, Carl. art L3 1:6 Feb76 p86-88 \*\*\* Joystick / Analog/Digital Circuit  
Ham's application dreams. Hosking, W.J. art 1:14 Oct76 p26-29 \*\*\* Ham Radio  
Handy pulser. Chislop, Bob. art 4:9 Sep79 p160-161 \*\*\* Test Equipment / Debugging  
Hobby unmap. Stirling, Ralph. col 4:5 May79 p218-219 \*\*\* Wire Wrap  
Hobbyist robot arm. Baster/Daly. art 4:2 Feb79 p84-88 \*\*\* Robots  
How to build a memory with one layer printed circuits (static RAM). Lancaster, Don. art 1:8 Apr76 p28-32 \*\*\* Memory

# HARDWARE CONSTRUCTION (CONTINUED)

How to build an inexpensive cassette level indicator. Chepko, Milan. col 6:9 Sep81 p435 \*\*\* Tape Cassette  
I've got you in my scanner! (computer controlled light scanner). Clarcia, Steve. col L1 3:11 Nov78 p76-89 \*\*\* Security / Home / Analog/Digital Circuit  
10 strobes for the Altair 8800. Schulein, John. art 1:8 Apr76 p79 \*\*\* Altair  
Inexpensive optical paper-tape reader. Harron, Brian. art 4:9 Sep79 p118-121 \*\*\* Paper Tape Reader  
Interrupt-driven real-time clock for the TMS 9900. Morris, Thomas. art L3 5:9 Sep80 p282-302 \*\*\* Clock / 9900  
Let there be light pens. Loomis, Summer. art 1:5 Jan76 p26-30 \*\*\* Light Pen / Graphics  
Let your fingers do the talking: add a noncontact touch scanner.... Clarcia, Steve. col L1 3:8 Aug78 p156-165 \*\*\* Input/Output / Video Display  
Line-failure indicator. Olson, Hank. col 5:11 Nov80 p86-88 \*\*\* Power Supply / Test Equipment  
Low cost light wand amplifier\*. Mosley, Robin. art 3:5 May78 p92-95 \*\*\* Bar Codes / Light Wand  
Make your next peripheral a real eye opener\*. Clarcia, Steve. art L3 1:15 Nov76 p78-89 \*\*\* Graphics  
Make your own printed circuits. Mogenson, James. art 1:11 Jul76 p58-63 \*\*\* Manufacturing / Electronic Circuits  
Micrograph, part 2: video-display processor. Booth, G. Brady. art L3 5:12 Dec80 p120-138 \*\*\* Color Graphics / High Resolution Graphics / Video Display  
More information on PROMs\*. Smith, Roger. art 3:19 May76 p28-34 \*\*\* PROM / Programming Instruction  
Multiplex your digital LED displays. Mogenson, James. art 2:3 Mar77 p122-128 \*\*\* Input/Output / LED Display  
New dress for KIM (mounting a KIM in a briefcase). Atkins, R. Travis. art 2:9 Sep77 p26-27 \*\*\* KIM  
No power for your interfaces? Build a 5 W DC to DC converter. Clarcia, Steve. col 3:10 Oct78 p22-31 \*\*\* Power Supply / Power Supply  
Note to novice kit builders. art 2:12 Dec77 p192 \*\*\* Integrated Circuits / Kit Building  
Notes on bringing up a microcomputer. Libes, Sol. art 3:1 Jan78 p162-164 \*\*\* Microcomputer System  
Octal front panel. DeMontroy, Herman. art 1:9 May76 p39-40 \*\*\* Input/Output / Keyboard  
On a test equipment diet? Try an 8 channel DVM cocktail. Clarcia, Steve. col L3 2:12 Dec77 p76-80 \*\*\* Test Equipment  
One-sided view of wire wrap sockets. Rampil, Ira. art 2:9 Sep77 p54-55 \*\*\* Wire Wrap  
Penny pinching address state analyzer. Clarcia, Steve. col 3:2 Feb78 p6-12 \*\*\* Test Equipment / Memory  
Personal computer on a student's budget. Johnston, J.C. art 5:7 Jul80 p138-146 \*\*\* Microcomputer System / Kit Building  
Photographic notes on wire wrapping. Helmers, Carl. art 1:5 Jan76 p56-59 \*\*\* Wire Wrap  
Pick up BASIC by PROM bootstraps. Kretzner, Jim. art L3 2:1 Jan77 p50-51 \*\*\* Utility Program / PROM / Altair  
Pot plotting digitizing idea. Schulein, John. art 1:7 Mar76 p79 \*\*\* Analog/Digital Circuit  
Powerless IC test clip. Errico/Baker. art 1:4 Dec75 p26-27 \*\*\* Test Equipment / Integrated Circuits  
Program your next EROM in BASIC\*. Clarcia, Steve. col L1 3:3 Mar78 p84-93 \*\*\* EPROM / Programming Instruction  
Programmable IC tester. Thorson, Mark. art 3:6 Jun78 p28-35 \*\*\* Test Equipment / Integrated Circuits  
Proposal for a universal prototyping bus structure. Washburn, David. col 1:16 Dec76 p128-130 \*\*\* Standards  
Recycling used ICs. Hikkelsen, Carl. art 1:1 Sep75 p20-21 \*\*\* Integrated Circuits  
Save money using mini wire wrap. Thompson, Roger. art 1:8 Apr76 p80-81 \*\*\* Wire Wrap  
Secret of unraveling wire wrap boards. Lerseth, Richard. art 1:4 Dec75 p17 \*\*\* Wire Wrap  
Self-refreshing LED graphics display. Clarcia, Steve. col L1 4:10 Oct79 p58-69 \*\*\* Graphics / LED Display  
Signal processing for optical bar code scanning. Merkowitz, Frederick. art 1:16 Dec76 p77-84 \*\*\* Bar Codes / Fiber-optics  
Simple approaches to computer music synthesis. Schneider, Thomas. art 2:10 Oct77 p140-144 \*\*\* Music  
Soldering techniques. Trimmer, William. art 4:9 Sep79 p84-88 \*\*\* Kit Building  
Sonic anemometry for the hobbyist. Dvorak, Neil. art L3 4:7 Jul79 p120-132 \*\*\* Analog/Digital Circuit / Weather  
Sound off! (creating music and sound effects). Clarcia, Steve. col L3 4:7 Jul79 p34-51 \*\*\* Sound Effects  
TV oscilloscope (building a display and using it as a test instrument). Barbier, Ken. art 2:7 Jul77 p52-57 \*\*\* Video Display / Test Equipment  
Talk to a turtle: build a computer controlled robot. Gupton, James. art 4:8 Jun79 p74-84 \*\*\* Robots

## HARDWARE CONSTRUCTION (CONTINUED)

Talk to me! Add a voice to your computer for \$35.  
Clarcia, Steve. col L3 3:6 Jun78 p142-151  
\*\*\* Voice Synthesis / Analog/Digital Circuit /

Tip for using wiring pencils. Burhans, R.W. art 1:15 Nov76 p40 \*\*\* Wire Wrap  
Tune in with some chips (programmable music tone generator). Stered, Ted. art L2 2:9 Sep77 p84-94 \*\*\* Music / Sound Effects  
Tutorial training computer. Winkel, David. col 2:1 Jan77 p76-77 \*\*\* Computer Instruction / Education

Versatile read only memory programmer. Helmers, Peter. art L3 3:12 Dec78 p66-71 \*\*\* PROM / Programming Instruction  
What's involved in kit building? Frenzel, Louis. art 2:3 Mar77 p50-60 \*\*\* Kit Building / Video Display / 8080  
Wire-wrapping and proto-system techniques. Mangieri, Adolph. art 6:5 May81 p152-170 \*\*\* Wire Wrap  
Zapper: a computer driven EROM programmer\*. Gable, G.W. art L3 3:12 Dec78 p100-106 \*\*\* EPROM / Programming Instruction

## 6800

Add a kluge harp to your computer\*. Helmers, Carl. art L3 1:2 Oct75 p14-18 \*\*\* Music / 6800  
Build a 6800 system with this kit. Kay, Gary. art 1:4 Dec75 p72-76 \*\*\* SWTPC / 6800 / Microcomputer System  
Build this video display terminal. Anderson, Alfred. art L3 1:15 Nov76 p106-118 \*\*\* Terminal / Video Display / 6800  
Building an M6800 microcomputer\*. Abbott, Bob. art 1:10 Jun76 p40-45 \*\*\* 6800 / Microcomputer System / MIXBUG  
COMPLEAT tape cassette interface. Hemenway, Jack. art L3 1:7 Mar76 p10-16 \*\*\* Interface / Tape Cassette / 6800  
Computer-based laboratory timer. Gibson, John. art L3 6:6 Jun81 p110-144 \*\*\* Clock / 6800 / Science  
Computer-controlled light dimmer, part 2: implementation. Gibson, John. art L3 5:2 Feb80 p72-80 \*\*\* Control / 6800  
Does anybody know what time it is? Grappell, Robert. art L3 2:11 Nov77 p68-70 \*\*\* Clock / Interface / 6800  
Enterprising display device (6T-6144 graphics display generator). Dera, Jon. art L3 1:15 Nov76 p42-54 \*\*\* Graphics / 6800 / SWTPC  
Using interrupts for real time clocks\*. Smith, M.F. art L3 2:11 Nov77 p50-53 \*\*\* Clock / 6800 / Programming Instruction

## 8080

Add some control to your computer: an output port tutorial. Barber, Ken. art L3 4:9 Sep79 p196-200 \*\*\* Control / 8080  
Build the beer budget graphics interface. Nelson, Peter. art L3 1:15 Nov76 p26-29 \*\*\* Graphics / Interface / 8080  
Build this mathematical function unit, part 2: software. Guthrie, R. Scott. art L3 1:14 Oct76 p74-80 \*\*\* Mathematics / Programming Instruction / 8080  
Digital Group 8080A (Try this computer on for size). Clarcia, Steve. art 2:3 Mar77 p114-121 \*\*\* Microcomputer System / Hardware Review / 8080  
Get on at the right address (changing the "wake up" address of the 8080). Holman, Frank. art 3:3 Mar78 p185 \*\*\* 8080  
Memory mapped IO. Clarcia, Steve. col L3 2:11 Nov77 p10-16 \*\*\* Memory / 8080 / Input/Output  
Program those 2708s!. Glaser, Robert. art L3 5:4 Apr80 p198-210 \*\*\* EPROM / Programming Instruction / 8080

## APPLE II

Apple analog-to-digital conversion in 27 microseconds. Seeds/Levison. art L3 6:10 Oct81 p458-461 \*\*\* Analog/Digital Circuit / Apple II / Astronomy  
Apple audio processing. Cross, Mark. art L3 5:4 Apr80 p212-218 \*\*\* Voice Synthesis / Apple II / Audio Processing  
Build a low-cost speech-synthesizer interface. Clarcia, Steve. col L3 6:8 Jun81 p46-68 \*\*\* Apple II / Voice Synthesis / TRS-80 Model I  
Cross-pollinating the Apple II (serial interface). Campbell, Richard. art L3 4:4 Apr79 p20-25 \*\*\* Interface / Serial Input/Output / Apple II  
Low-speed analog-to-digital converter for the Apple II. Hallgren, Richard. art L3 4:9 Sep79 p70-78 \*\*\* Analog/Digital Circuit / Interface / Apple II

## CONTROL

Add some control to your computer: an output port tutorial. Barber, Ken. art L3 4:9 Sep79 p196-200 \*\*\* Control / 8080  
Build a 28-based control computer with BASIC, part 1. Clarcia, Steve. col 6:7 Jul81 p38-47 \*\*\* Microcomputer System / Control / 88  
Build a 28-based control computer with BASIC, part 2. Clarcia, Steve. col L3 6:8 Aug81 p50-72 \*\*\* Control / Microcomputer System / 28  
Build a computer controlled security system for your home. Clarcia/Sunderland. col 4:1 Jan79 p56-71 \*\*\* Security / Home / Control

## HARDWARE CONSTRUCTION (CONTINUED)

Build a computer controlled security system for your home: part 2. Clarcia, Steve. col L2 4:2 Feb79 p162-179 \*\*\* Security / Home / Control  
Build a computer controlled security system for your home: part 3. Clarcia, Steve. col L3 4:3 Mar79 p150-167 \*\*\* Security / Home / Control  
Build a simple video switch. Hallgren, Richard. col 6:3 Mar81 p234 \*\*\* Video Display / Control  
Build a touch tone decoder for remote control. Clarcia, Steve. col 6:12 Dec81 p62-70 \*\*\* Control / Home / Telecommunications  
Build the Disk-80: memory expansion and floppy-disk control (TRS-80). Clarcia, Steve. col 6:3 Mar81 p36-52 \*\*\* Disk Controllers / Minidisk Drive / TRS-80 Model I  
Cassette interface switching box for the TRS-80\*. Anderson, Craig. art 3:11 Nov78 p160-161 \*\*\* Tape Cassette / Control / TRS-80 Model I  
Computer-controlled light dimmer, part 2: implementation. Gibson, John. art L3 5:2 Feb80 p72-80 \*\*\* Control / 6800  
Computer-controlled tank. Clarcia, Steve. col L1 6:2 Feb81 p44-64 \*\*\* Control / Toys Control the world (or at least a few analog points). Clarcia, Steve. art L1 2:9 Sep77 p30-43 \*\*\* Control / Digital/Analog Circuit  
Controlling DC motors. Walton, Robert. art L3 3:7 Jul78 p72-80 \*\*\* Control  
Controlling external devices with hobbyist computer. Bosen, Robert. art 1:8 Apr76 p42-45 \*\*\* Control / Interface  
DC motor controls: build a motorized platform. Clarcia, Steve. col 6:5 May81 p66-98 \*\*\* Control  
Do it yourself weather predictions\*. Birch, Michael. art 1:16 Dec76 p62-69 \*\*\* Control / Weather  
Furnace watchdog. Wierenga, Theron. art L1 5:1 Jan80 p74-80 \*\*\* Energy / Control / Home  
Handheld remote control for your computerized home. Clarcia, Steve. col L1 5:7 Jul80 p22-42 \*\*\* Control / Home / Input/Output  
Home in on the range!. Clarcia, Steve. col L1 5:11 Nov80 p32-58 \*\*\* Control / Interface / TRS-80 Model I  
Microprocessor based analog/digital conversion. Frank, Roger. art L3 1:9 May76 p70-73 \*\*\* Control / Digital/Analog Circuit  
Mind over matter: add biofeedback to your computer. Clarcia, Steve. col L1 4:8 Jun79 p49-58 \*\*\* Control / Health / Analog/Digital Circuit  
Race-car monitoring program. Johnson, Jeff. col L1 5:8 Jun80 p166-168 \*\*\* Control / Interface  
Telephone-dialing microcomputer. Rambarger, John. art L3 5:6 Jun80 p140-170 \*\*\* Control / Telecommunications / KIM  
There's more to blinking lights than meets the eye. Helmers, Peter. art L3 1:5 Jan76 p52-54 \*\*\* Control / 8080  
Tune in and turn on, part 1: a computerized wireless AC control system. Clarcia, Steve. col L1 3:4 Apr78 p114-125 \*\*\* Control / Home  
Tune in and turn on, part 2: an AC wireless remote control system. Clarcia, Steve. col 3:5 May78 p97-102 \*\*\* Control / Home

## DESIGN

6502 personal system design: Komputer. Brader, David. art L3 2:11 Nov77 p94-141 \*\*\* Design / 6502 / Microcomputer System  
Another plotter to toy with, revisited: design and construction details. Grappell, Robert. art L3 5:2 Feb80 p202-207 \*\*\* Plotter / KIM / Design  
Building a computer from scratch. Jones, Hilary. art 2:11 Nov77 p80-92 \*\*\* Design / Computer Instruction / Microcomputer System  
Computer music: a design tutorial. Orlofsky, Thomas. art L3 6:3 Mar81 p317-332 \*\*\* Music / Z-80 / Design  
Designing a robot from nature, part 2: constructing the eye. Filo, Andrew. art 4:3 Mar79 p114-123 \*\*\* Robots / Design  
Implementing an LSI frequency counter. Lynne, Perry. art L3 2:11 Nov77 p146-149 \*\*\* Frequency Counter / Design  
LEDs light up your logic. Gray, E.W. art 1:6 Feb76 p54-57 \*\*\* Design  
Modular construction, or why not do it yourself. Walters, Don. art 1:2 Oct75 p46-47 \*\*\* Design  
Photo essay: physical hardware of a new computer backplane. Helmers, Carl. art 4:7 Jul79 p194-197 \*\*\* Microcomputer System / Design  
Photographic notes on prototype construction. Helmers, Carl. art 1:4 Dec75 p84-96 \*\*\* Design  
Recording with current instead of voltage. Hein, David. col 6:2 Feb81 p138-140 \*\*\* Tape Cassette / Design  
Switching power supplies: an introduction. Clarcia, Steve. col 8:11 Nov81 p36-45 \*\*\* Power Supply / Design

## GAMES

Life line 4: integrating graphics control commands. Helmers, Carl. art 1:5 Jan76 p32-41 \*\*\* Games / Graphics / Life  
Toy store begins at home. Clarcia, Steve. col L1 4:4 Apr79 p10-18 \*\*\* Music / Games

## HARDWARE REVIEW

Assembling the H9 video terminal. Steeden, Terry. art 3:10 Oct78 p130-135 \*\*\* Terminal / Heath / Hardware Review

## HARDWARE CONSTRUCTION (CONTINUED)

CT-1024 kit. Hogeness, James. hr 1:5 Jan76 p92-95 \*\*\* Hardware Review / Terminal / V180 Display  
Digital Group 8080A (Try this computer on for size). Clarcia, Steve. art 2:3 Mar77 p114-121 \*\*\* Microcomputer System / Hardware Review / 8080  
RGS 008A microcomputer kit. Hogeness, James. hr 1:1 Sep75 p16-19 \*\*\* Hardware Review / Microcomputer System / 8080  
SWTPC 6809 Microcomputer System. Harmon, Tom. hr L3 6:1 Jan81 p216-222 \*\*\* Hardware Review / SWTPC / 6809

## INTERFACE

\$19 music interface (and some music theory for computer nuts)\*. Struve, Bill. art L2 2:12 Dec77 p48-59 \*\*\* Interface / Music / KIM  
8088 processor for the S-100 bus, part 2. Cantrell, Thomas. art L3 5:10 Oct80 p62-88 \*\*\* 8088 / S-100 Bus / Interface  
Build a serial ASCII word generator. Finger, Ronald. art 1:9 May76 p50-53 \*\*\* Interface / ASCII / Test Equipment  
Build a super simple floppy-disk interface, part 1\*. Nicholson/Camp. art 6:5 May81 p360-376 \*\*\* Floppy Disk Drive / Interface / Bibliography  
Build a versatile keyboard interface for the S-100. Richards, David. art L3 6:10 Oct81 p400-406 \*\*\* Keyboard / S-100 Bus / Interface  
Build an oscilloscope graphics interface\*. Hogeness, James. art L3 1:2 Oct75 p70-80 \*\*\* Video Display / Interface / Graphics  
Build the BIT BOFFER\*. Lancaster, Don. art 1:7 Mar76 p30-39 \*\*\* Interface / Tape Cassette  
Build a serial ASCII word generator. Finger, Ronald. art 1:9 May76 p50-53 \*\*\* Interface / ASCII / Test Equipment  
Build this economy floppy disk interface. Welles, Kenneth. art L3 2:2 Feb77 p34-43 \*\*\* Interface / Floppy Disk Drive  
Building the AC-30 cassette interface. Liming, Gary. art 1:16 Dec76 p110-111 \*\*\* Interface / Tape Cassette / SWTPC  
COMPLEAT tape cassette interface. Hemenway, Jack. art L3 1:7 Mar76 p10-16 \*\*\* Interface / Tape Cassette / 6800  
Controlling external devices with hobbyist computers\*. Bosen, Robert. art 1:8 Apr76 p42-45 \*\*\* Control / Interface  
Cross-pollinating the Apple II (serial interface). Campbell, Richard. art L3 4:4 Apr79 p20-25 \*\*\* Interface / Serial Input/Output / Apple II  
Digital feedback loop (graphic displays). Loomis, Summer. art 1:3 Jan76 p46-47 \*\*\* Video Display / Graphics / Interface  
Digital minicassette controller. Kahn, James. art 6:4 Apr81 p66-92 \*\*\* Tape Cassette / Interface  
Does anybody know what time it is? Grappell, Robert. art L3 2:11 Nov77 p68-70 \*\*\* Clock / Interface / 6800  
Expanded digital voltmeter (Add more zing to the cocktail!). Clarcia, Steve. col L3 3:1 Jan78 p37-54 \*\*\* Test Equipment / Interface / Z-80  
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Handi-writer: a video note pad for the physically handicapped. Batie, Howard. art L1 6:12 Dec81 p474-482 \*\*\* Handicapped / Video Display / Interface  
Home in on the rangel. Clarcia, Steve. col L1 5:11 Nov80 p32-58 \*\*\* Control / Hardware Construction / Interface

## MATHEMATICS

Computing the determinant of a matrix. Flynn, Brian. col L1 6:3 Mar81 p152-154 \*\*\* Mathematics / Programming Instruction  
General interpolating graphics package for the TRS-80\*. Cohen/Crowe. art 1 5:11 Nov80 p296-310 \*\*\* Graphics / Mathematics / Plotting  
Knachian's algorithm, part 2: problems with the algorithm. Berresford/et al. art L1 5:9 Sep80 p242-256 \*\*\* Linear Programming / Mathematics / Algorithm  
Life after death. Macaluso, Pat. art L1 6:7 Jul81 p326-333 \*\*\* Games / Mathematics / Life  
Multiple regression for the TRS-80. Madron, Thomas. art L1 6:10 Oct81 p430-447 \*\*\* Mathematics  
Symbolic differentiation a la LISP. Nicol, Ronald. art L9 6:9 Sep81 p216-234 \*\*\* LISP / Mathematics / Programming Instruction

## PROGRAMMING INSTRUCTION

BREAKFORTH into FORTH. Miller/Miller. art L7 5:8 Aug80 p150-163 \*\*\* FORTH / Games / Programming Instruction

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Computing the determinant of a matrix. Flynn, Brian. col L1 6:3 Mar81 p152-154 \*\*\* Mathematics / Programming Instruction  
Exploring TRS-80 graphics. Feager, George. art L2 4:8 Aug78 p82-84 \*\*\* Graphics / Language / Sound Effects  
Programming instruction / Z-80  
Some notes on modular assembly programming. Lewis, James. art L3 4:12 Dec79 p222-226 \*\*\* Programming Instruction / Assembly  
Spending up TRS-80 graphics. Bobo/Knodner. art L1 6:5 May81 p171-184 \*\*\* Graphics / Programming Instruction  
Symbolic differentiation a la LISP. Nicol, Ronald. art L9 6:9 Sep81 p216-234 \*\*\* LISP / Mathematics / Programming Instruction

## SOFTWARE REVIEW

BOSS: a debugging utility for the TRS-80 Model I. Mitchell, Scott. sr 6:8 Aug81 p801 \*\*\* Software Review / Utility Program / Debugging  
Big Five software (Attack Force, Cosmic Fighter, and Galaxy Invasion). Williams, Gregg. sr 6:9 Sep81 p384-386 \*\*\* Software Review / Arcade / Games  
Combat: a tele-game for two. Stewart, George. sr 6:12 Dec81 p100-104 \*\*\* Software Review / Games / Strategy  
DOSPLUS: double-density operating system for the TRS-80. Kolya, Vyon. sr 6:7 Jul81 p334-343 \*\*\* Software Review / Operating Systems / Minidisk Drive  
Dancing Demon from Radio Shack. Cooper/Kolya. sr 6:5 May81 p148-150 \*\*\* Software Review / Games / Arcade  
Datahandler from Miller Microcomputer Services. Richardson, Allyn. sr 6:11 Nov81 p138-150 \*\*\* Software Review / Data Base Management / FORTH  
ENHANS (TRS-80 Model I/III enhanced operating environment). BASIL. Kelly, Mahlon. sr L1 6:11 Nov81 p342-360 \*\*\* Software Review / Operating Systems / Utility Program  
IRV, a TRS-80 utility program. Li, Terry. sr 6:2 Feb81 p202-208 \*\*\* Software Review / Utility Program  
Infinite BASIC and Infinite Business. Mitchell, Scott. sr 6:2 Feb81 p96-102 \*\*\* Software Review / Utility Program / BASIC  
Interactive Fiction: Six Micro Stories. Liddil, Bob. sr 6:9 Sep81 p436 \*\*\* Software Review / Simulation / Games  
Microsoft Adventure. Liddil, Bob. sr 5:12 Dec80 p264-266 \*\*\* Software Review / Games / Strategy  
Microsoft Editor/Assembler Plus. Carlson, Keith. sr 6:8 Aug81 p398-400 \*\*\* Software Review / Assembler  
Misosys Software's DISKMOD: put Radio Shack's Editor/Assembler on disk. Hughes, Steve. sr 6:9 Sep81 p146-148 \*\*\* Software Review / Utility Program / Assembler  
Morloc's Tower. Williams, Gregg. sr 5:12 Dec80 p84-86 \*\*\* Software Review / Games / Strategy  
Orchestra-80. Cooper/Kolya. sr 6:11 Nov81 p264-272 \*\*\* Software Review / Music  
Pascal-80. Archer, Rowland. sr 6:12 Dec81 p304-312 \*\*\* Software Review / Pascal / Compiler  
Radio Shack FORTRAN package. Danieluk, Tim. sr L4 6:10 Oct81 p385-390 \*\*\* Software Review / FORTRAN  
Starfighter. Grammer, Eric. sr 6:12 Dec81 p366-368 \*\*\* Software Review / Arcade / Games  
Star Trek 4.0 and Star Trek 3.5. Mitchell, Scott. sr 6:6 Jun81 p352-354 \*\*\* Software Review / Games / Strategy  
Super Nova. Liddil, Bob. sr 6:5 May81 p108-110 \*\*\* Software Review / Games / Arcade  
Super STEP (TRS-80 utility). Robbins, Stanley. sr 6:5 May81 p248-252 \*\*\* Software Review / Utility Program / Debugging  
Zork, the great underground empire (TRS-80). Liddil, Bob. sr 6:2 Feb81 p262-264 \*\*\* Software Review / Games / Strategy

## TRS-80 MODEL III

Build an unlimited-vocabulary speech synthesizer. Clarcia, Steve. col L1 6:9 Sep81 p38-50 \*\*\* Voice Synthesis / Hardware Construction  
PDQ: a data manager for beginners. Swanson, Paul. art L1 6:11 Nov81 p236-262 \*\*\* Data Base Management / Inventory / Programming Instruction  
Three new computers from Radio Shack (Model III, Color and Pocket). Miaszkowski, Stan. hr L1 5:10 Oct80 p172-180 \*\*\* TRS-80 Color / TRS-80 Pocket Computer / Hardware Review  
TRS-80 POCKET COMPUTER  
Numerical analysis for the TRS-80 pocket computer. Salem, Mike. col L1 6:1 Jun81 p182-184 \*\*\* Mathematics / Fourier Transforms / Hand-held Computer  
Three new computers from Radio Shack (Model III, Color and Pocket). Miaszkowski, Stan. hr L1 5:10 Oct80 p172-180 \*\*\* TRS-80 Model III / TRS-80 Color / Hardware Review

## TTL GATES

Interfacing TTL to a 20 mA current loop. Hsiao, H.S. col 4:2 Feb79 p150 \*\*\* Interface / Printer / RS-232  
Look what you can do...with an edge as a cue (non-standard uses of ICs). Tenney, Ralph. art 2:8 Aug77 p120-126 \*\*\* Integrated Circuits  
Some musings on Boolean algebra\*. Bunce/Schwartz. art 3:2 Feb78 p25-29 \*\*\* Mathematics / Design

# TTL GATES (CONTINUED)

TTL loading considerations. Tomalesky, Greg. art 2:2 Feb77 p122-124 \*\*\* Design  
What's an I<sup>2</sup>L (I squared L)? Steeden, Terry. art 1:12 Aug76 p84-86 \*\*\* Electronic Circuits  
TURING MACHINES  
Build your own Turing machine. Willis, James. art L3 6:4 Apr81 p122-146 \*\*\* Hardware Construction / Definitions / Computer Instruction  
Designing a universal Turing Machine: a software approach. Munnecke, Thomas. art L3 3:12 Dec78 p26-30 \*\*\* Design / Computer Instruction  
Universal Turing machine. Willen, Jonathan. art 1:16 Dec76 p114-119 \*\*\* Computer Instruction

## UART

Serial interface\*. Lancaster, Don. art 1:1 Sep75 p22-37 \*\*\* Serial Input/Output / Interface / Parallel Input/Output

## UNIX

New 16-bit operating systems, or, the search for Benutzerfreundlichkeit. Morgan, Chris. col 6:6 Jun81 p6-10 \*\*\* Operating Systems  
Operating systems: let's have some UNIX-inspired software. Nowell, Jim. col 4:9 Sep79 p82-83 \*\*\* Operating Systems  
UNIX operating system and the XENIX standard operating environment. Greenberg, Robert. art 6:6 Jun81 p248-264 \*\*\* Operating Systems / XENIX

## UTILITY PROGRAM

ADM-3 emulator for the Hazeltine 1500. Shoemaker, Charles. col L3 6:4 Apr81 p304-308 \*\*\* Terminal / CP/M  
BASIC cross-reference table generator. Englander/Englander. col L1 4:4 Apr79 p190-192 \*\*\* IMSL / BASIC  
Dateline (converts object code to BASIC data statements). Hunt, Daniel. col L1 6:3 Mar81 p216-222 \*\*\* Conversions / BASIC / SOL  
Direct impact of the computer (using a line printer in place of a stamp). Shuford, Richard. col L1 5:3 Mar80 p186-187 \*\*\* Mail List  
File catalog system for UCSD Pascal. Heyman, Edward. art L6 6:5 May81 p408-427 \*\*\* Pascal  
Formatted program output for the KIM-1. Ezard, Lawrence. col L3 5:5 May80 p190-194 \*\*\* KIM  
LIST - a source-listing program for the C language. Taylor, Jeff. col L8 6:6 Jun81 p234-246 \*\*\* C Programming Language  
Label and file program. Carpenter, Andrew. col L1 4:4 Apr79 p222-223 \*\*\* Business / SWTPC  
On the importance of backups (includes a Pascal utility to recover files). Helmers, Carl. col L6 4:4 Apr79 p6 \*\*\* Maintenance / Pascal  
Picking up the pieces (rebuilding a bit map of used sectors on a disk). Baker, Alfred. art L3 4:10 Oct79 p76-86 \*\*\* Floppy Disk Drive / Minidisk Drive  
Sweet auto line (automatic line numbering)\*. Nico, Willard. art L3 2:2 Feb77 p12-20 \*\*\* IMSL  
Tiny Pascal source creator. Phillips, Thomas. col L1 4:7 Jul79 p231-232 \*\*\* Pascal / North Star  
Turn your COSMAC VIP into a frequency counter. Model, Andrew. art L3 6:2 Feb81 p318-323 \*\*\* Frequency Counter / COSMAC

6800 Selectric IO printer program. Guzzon, Fulvio. art L3 2:6 Jun77 p140-142 \*\*\* Printer / IBM / 6800  
6800 program relocater\*. Carpenter, Andrew. col L3 2:11 Nov77 p197 \*\*\* 6800  
Jack and the machine debug...or reading the traces of a wild program. Grappel/Memway. art 2:12 Dec77 p91 \*\*\* Debugging / 6800 / MIKBUG  
Software controlled 1200 bps audio tape interface. Helmers, Carl. art L3 2:4 Apr77 p40-49 \*\*\* Interface / Tape Cassette / 6800  
Text loader routine. Berenson, Howard. col L3 4:9 Sep79 p129 \*\*\* 6800  
Thompson lister (for 6800 programs). Thompson, Model. col L3 1:14 Oct76 p99 \*\*\* MIKBUG / 6800 / Printer

## 8080

Add some BANC to your 8080. Howerton, Charles. art L3 2:2 Feb77 p132-139 \*\*\* Programming Instruction / 8080  
Critique of self-modifying code. Newcomer, Joseph. col L3 2:6 Jun77 p112-115 \*\*\* Programming Instruction / 8080  
Machine code relocater for the 8080. Zolman, Leon. art L3 2:7 Jul77 p92-95 \*\*\* 8080 / Programming Instruction  
Relocating 8080 system software. Lipham, John. art L3 5:1 Jan80 p180-192 \*\*\* 8080 / Programming Instruction

## APPLE II

Apple Pascal cross-reference. Woodhead, Robert. col L6 6:10 Oct81 p419-429 \*\*\* Pascal / Apple II  
Generating programs automatically. Jacobs, Jacob. art L1 6:12 Dec81 p352-362 \*\*\* Apple II  
List Pager (Apple II utility). Lovett, Allan. col L1 6:10 Oct81 p122 \*\*\* Printer / Apple II

# UTILITY PROGRAM (CONTINUED)

## HARDWARE CONSTRUCTION

Pick up BASIC by PROM bootstraps. Kretnier, Jim.  
art L3 2:1 Jan77 p50-51 \*\*\* PROM /  
Altair / Hardware Construction

## INTERFACE

Software controlled 1200 lbs audio tape  
interface. Helmers, Carl. art L3 2:4 Apr77  
p40-49 \*\*\* Interface / Tape Cassette / 6800

## MATHEMATICS

Complex number subroutines. Harlow, William.  
col L1 5:11 Nov80 p116-118 \*\*\*  
Mathematics / BASIC  
Formatting dollars and cents. Palenik, Les. col  
L1 3:10 Oct78 p68 \*\*\* Mathematics / PET  
muSIMP/muMATH-79 symbolic math system. Williams,  
Gregg. sr 5:11 Nov80 p324-338 \*\*\*  
Software Review / Mathematics / Education

## PROGRAMMING INSTRUCTION

Add some BASIC to your 8080. Howerton, Charles.  
art L3 2:2 Feb77 p132-139 \*\*\* Programming  
Instruction / 8080  
Basic formatted output (PRINT USING subroutines).  
Roch, William. art L1 5:2 Feb80 p176-186  
\*\*\* BASIC / Programming Instruction  
Critique of self-modifying code. Newcomer,  
Joseph. col L3 2:6 Jun77 p112-115 \*\*\*  
Programming Instruction / 8080  
Machine code relocater for the 8080. Zolman,  
Leor. art L3 2:7 Jul77 p92-95 \*\*\* 8080 /  
Programming Instruction  
Relocating 8080 system software. Lipham, John.  
art L3 5:1 Jan80 p180-192 \*\*\* 8080 /  
Programming Instruction

## SOFTWARE REVIEW

Atari's Telelink I. Flint, Glen. sr 6:10  
Oct81 p86-90 \*\*\* Software Review / Atari /  
Terminal  
BOSS: a debugging utility for the TRS-80 Model I.  
Mitchell, Scott. sr 6:8 Aug81 p401 \*\*\*  
Software Review / Debugging / TRS-80 Model I  
ENHBASE (TRS-80 Model I/III enhanced operating  
environment and BASIC). Kelly, Mahlon. sr L1  
6:11 Nov81 p342-360 \*\*\* Software Review /  
Operating Systems / TRS-80 Model I  
IRV, a TRS-80 utility program. Li, Terry. sr  
6:2 Feb81 p202-208 \*\*\* Software Review /  
TRS-80 Model I  
Infinite BASIC and Infinite Business. Mitchell,  
Scott. sr 6:2 Feb81 p96-102 \*\*\* Software  
Review / TRS-80 Model I / BASIC  
Misosys Software's DISKMOD: put Radio Shack's  
Editor/Assembler on disk. Hughes, Steve. sr  
6:9 Sep81 p146-148 \*\*\* Software Review /  
TRS-80 Model I / Assembler  
Reformatter for CP/M and IBM floppy disks.  
Lehman, John. sr 6:4 Apr81 p94-96 \*\*\*  
Software Review / CP/M / CP/M  
Super STEP (TRS-80 utility). Robbins, Stanley.  
sr 6:5 May81 p248-252 \*\*\* Software Review  
/ TRS-80 Model I / Debugging  
muSIMP/muMATH-79 symbolic math system. Williams,  
Gregg. sr 5:11 Nov80 p324-338 \*\*\*  
Software Review / Mathematics / Education

## TRS-80 MODEL I

BOSS: a debugging utility for the TRS-80 Model I.  
Mitchell, Scott. sr 6:8 Aug81 p401 \*\*\*  
Software Review / Debugging / TRS-80 Model I  
Disk catalog for the eighties. Liddell, Bob. col  
L1 6:8 Aug81 p404-407 \*\*\* Minidisk Drive /  
TRS-80 Model I  
ENHBASE (TRS-80 Model I/III enhanced operating  
environment and BASIC). Kelly, Mahlon. sr L1  
6:11 Nov81 p342-360 \*\*\* Software Review /  
Operating Systems / TRS-80 Model I  
IRV, a TRS-80 utility program. Li, Terry. sr  
6:2 Feb81 p202-208 \*\*\* Software Review /  
TRS-80 Model I  
Infinite BASIC and Infinite Business. Mitchell,  
Scott. sr 6:2 Feb81 p96-102 \*\*\* Software  
Review / TRS-80 Model I / BASIC  
Memory manipulator: eliminate hex-a-phobia.  
Witt, Louis. col L1 6:10 Oct81 p356-364  
\*\*\* TRS-80 Model I / Machine Language  
Misosys Software's DISKMOD: put Radio Shack's  
Editor/Assembler on disk. Hughes, Steve. sr  
6:9 Sep81 p146-148 \*\*\* Software Review /  
TRS-80 Model I / Assembler  
Peek at poke (pokes hexadecimal values into  
memory). Parris, M. col L1 4:6 Jun79  
p212-213 \*\*\* TRS-80 Model I / Hexadecimal  
Super STEP (TRS-80 utility). Robbins, Stanley.  
sr 6:5 May81 p248-252 \*\*\* Software Review  
/ TRS-80 Model I / Debugging

## VIC-20

Commodore VIC 20 microcomputer: a low-cost, high  
performance... computer\*. Williams, Gregg. sr  
L1 6:5 May81 p46-64 \*\*\* Hardware Review

## VIDEO CONTROLLER

Intel 8274 CRT controller. Tennant, Chris. art  
4:5 May79 p130-148 \*\*\* Hardware Review  
Single chip video controller. Haas, Bob. art  
4:5 May79 p52-75 \*\*\* Integrated Circuits /  
Hardware Review / Design

## VIDEO DISK

What do you do with a video disk?. Buchanan,  
Martin. art L1:2 Aug76 p6-8 \*\*\*  
Information Storage

## VIDEO DISPLAY

Colorful view of personal computing. Helmers,  
Carl. col 2:10 Oct77 p6+ \*\*\* Color  
Graphics / High Resolution Graphics / Color  
Display

# VIDEO DISPLAY (CONTINUED)

Future trends in personal computing. Morgan,  
Chris. col 6:4 Apr81 p6-10 \*\*\* Future /  
Minidisk Drive / Osborne I  
GRAPH: a system for television graphics, part 2  
(8080 code)\*. Webster/Young. art L3 3:6  
Jun78 p158-161 \*\*\* Graphics  
Separate your sync (how to modify a TV monitor).  
Rosen, David. art 2:1 Jan77 p92-93 \*\*\*  
Hardware Modification  
Solving the problems of international television  
standards. Dehaven, E. John. col 3:4 Apr78  
p152-153 \*\*\* Standards

## 8080

Build this video display terminal. Anderson,  
Alfred. art L3 1:15 Nov76 p106-118 \*\*\*  
Terminal / Hardware Construction / 6800

## 8080

Vector graphics for raster displays. Beuten,  
John. art L3 5:10 Oct80 p286-293 \*\*\*  
Graphics / 8080

## APPLE II

Videx keyboard and display enhancer. Pelczarski,  
Mark. sr 6:7 Jul81 p354-356 \*\*\* Hardware  
Review / Apple II / Keyboard

## CONTROL

Build a simple video switch. Hallgren, Richard.  
col 6:3 Mar81 p234 \*\*\* Hardware  
Construction / Control

## DESIGN

Atari tutorial, part 1: the display list.  
Crawford, Chris. art 6:9 Sep81 p284-300  
\*\*\* Atari / Design / Graphics  
Getting to know your monitor. Dalpiaz, Ron. art  
5:11 Nov80 p206-217 \*\*\* Design /  
Maintenance  
Simplified theory of video graphics, part 1.  
Watson, Allen. art 5:11 Nov80 p180-189 \*\*\*  
Graphics / Design  
Simplified theory of video graphics, part 2.  
Watson, Allen. art 5:12 Dec80 p142-156 \*\*\*  
Color Graphics / Design  
TV color graphics\*. Lancaster, Don. art 1:6  
Feb76 p62-69 \*\*\* Color Graphics / Design  
Tick...Tick...Tick...Booooo (safety problems with  
small TV sets). Jazewski, W.B. col 3:4  
Apr78 p154-155 \*\*\* Design / Power Supply  
Waterloo RF modulator. Banks, Walter. art 3:1  
Jan78 p94 \*\*\* Interface / Design  
What's in a video display terminal?. Walters,  
Don. art 1:7 Mar76 p78-79 \*\*\* Terminal /  
Design

## HARDWARE CONSTRUCTION

Add cursor control to your TVT II. McGahee,  
Thomas. art 2:7 Jul77 p122-123 \*\*\*  
Hardware Construction / Keyboard  
Build a TV readout device for your  
microprocessor. Lading, Robert. art L3 1:12  
Aug76 p66-73 \*\*\* Hardware Construction  
Build a simple video switch. Hallgren, Richard.  
col 6:3 Mar81 p234 \*\*\* Hardware  
Construction / Control  
Build a television display. Gantt, C.W. art  
1:10 Jun76 p16-21 \*\*\* Hardware Construction  
Build an oscilloscope graphics interface\*.  
Hogenson, James. art L3 1:2 Oct75 p70-80  
\*\*\* Hardware Construction / Interface /  
Graphics  
Build this video display terminal. Anderson,  
Alfred. art L3 1:15 Nov76 p106-118 \*\*\*  
Terminal / Hardware Construction / 6800  
CT-1024 kit. Hogenson, James. sr 1:5 Jan76  
p92-95 \*\*\* Hardware Review / Terminal /  
Hardware Construction  
Digital feedback loop (graphic displays).  
Loomis, Sumner. let 1:3 Nov75 p46-47 \*\*\*  
Graphics / Interface / Hardware Construction  
GRAPH: a system for television graphics, part 1.  
Webster/Young. art 3:5 May78 p62-77 \*\*\*  
Interface / Hardware Construction / Altair  
Let your fingers do the talking: add a noncontact  
touch scanner.... Clarcia, Steve. col L1  
3:8 Aug78 p158-165 \*\*\* Input/Output /  
Hardware Construction  
Micrograph, part 2: video-display processor.  
Booth, E. Grady. art L3 5:12 Dec80  
p120-138 \*\*\* Color Graphics / High  
Resolution Graphics / Hardware Construction  
Programmable character generator, part 1:  
hardware. Weinstein, Larry. art 3:5 May78  
p79-90 \*\*\* Interface / Hardware Construction  
/ Character Generator  
TV oscilloscope (building a display and using it  
as a test instrument). Barber, Ken. art 2:7  
Jul77 p52-57 \*\*\* Hardware Construction /  
Test Equipment  
Use your television set as a video monitor.  
Loomis, Timothy. art 4:2 Feb79 p46-54 \*\*\*  
Interface / Hardware Construction

## HARDWARE REVIEW

CT-1024 kit. Hogenson, James. sr 1:5 Jan76  
p92-95 \*\*\* Hardware Review / Terminal /  
Hardware Construction  
Convert your TV set to a video monitor. Fylstra,  
Dan. art 3:5 May78 p22+ \*\*\* Interface /  
Hardware Review  
MERLIN video interface adds a visual dimension to  
your Altair or IMSAI. sr 1:15 Nov76 p62-64  
\*\*\* Hardware Review / Interface / Altair  
Matrox ALT-256 video board (product description).  
Rupke, Gary. sr 3:5 May78 p24-30 \*\*\*  
Hardware Review / High Resolution Graphics /  
S-100 Bus

# VIDEO DISPLAY (CONTINUED)

Microangelo video display. Dahmke, Mark. sr  
5:11 Nov80 p196-202 \*\*\* Hardware Review /  
High Resolution Graphics / S-100 Bus  
Processor Technology VDM-1. Anderson, D. sr L3  
1:16 Dec76 p36-39 \*\*\* Hardware Review /  
Altair / IMSAI  
Using the Polymorphics video interface.  
Wenzlaff, Wayne. art 2:12 Dec77 p130-132  
\*\*\* Interface / Hardware Review  
Videx keyboard and display enhancer. Pelczarski,  
Mark. sr 6:7 Jul81 p354-356 \*\*\* Hardware  
Review / Apple II / Keyboard

## INTERFACE

Build an oscilloscope graphics interface\*.  
Hogenson, James. art L3 1:2 Oct75 p70-80  
\*\*\* Hardware Construction / Interface /  
Graphics  
Color displays on black and white television sets.  
Bain, Steve. art 2:2 Feb77 p44-48+ \*\*\*  
Color Graphics / Interface  
Comments on the RF entry method for video  
monitors. Wiseman, Victor. col 3:12 Dec78  
p202-204 \*\*\* S-100 / Interface  
Convert your TV set to a video monitor. Fylstra,  
Dan. art 3:5 May78 p22+ \*\*\* Interface /  
Hardware Review  
Digital feedback loop (graphic displays).  
Loomis, Sumner. let 1:3 Nov75 p46-47 \*\*\*  
Graphics / Interface / Hardware Construction  
GRAPH: a system for television graphics, part 1.  
Webster/Young. art 3:5 May78 p62-77 \*\*\*  
Interface / Hardware Construction / Altair  
Handi-writer: a video note pad for the physically  
handicapped. Batie, Howard. art L1 6:12  
Dec81 p474-482 \*\*\* Handicapped / TRS-80  
Model I / Interface  
MERLIN video interface adds a visual dimension to  
your Altair or IMSAI. sr 1:15 Nov76 p62-64  
\*\*\* Hardware Review / Interface / Altair  
Programmable character generator, part 1:  
hardware. Weinstein, Larry. art 3:5 May78  
p79-90 \*\*\* Interface / Hardware Construction  
/ Character Generator  
Television interface. Lancaster, Don. art 1:2  
Oct75 p20-32 \*\*\* Interface  
Use your television set as a video monitor.  
Loomis, Timothy. art 4:2 Feb79 p46-54 \*\*\*  
Interface / Hardware Construction  
Using the Polymorphics video interface.  
Wenzlaff, Wayne. art 2:12 Dec77 p130-132  
\*\*\* Interface / Hardware Review  
Waterloo RF modulator. Banks, Walter. art 3:1  
Jan78 p94 \*\*\* Interface / Design

## PROGRAMMING INSTRUCTION

Atari tutorial, part 4: display-list interrupts.  
Crawford, Chris. art L1 6:12 Dec81  
p166-186 \*\*\* Atari / Programming Instruction  
/ Graphics  
Let your fingers do the talking (scanner  
applications)\*. Clarcia, Steve. col L1 3:9  
Sep78 p94-100 \*\*\* Input/Output / Programming  
Instruction

## TRS-80 MODEL I

Handi-writer: a video note pad for the physically  
handicapped. Batie, Howard. art L1 6:12  
Dec81 p474-482 \*\*\* Handicapped / TRS-80  
Model I / Interface

## VIDEO DISPLAY GENERATION

Micrograph, part 1: ...an instruction set for a  
raster-scan display. Booth, E. Grady. art L3  
5:11 Nov80 p64-82+ \*\*\* Color Graphics /  
High Resolution Graphics / Design

## VIRTUAL MEMORY

Give your micro a megabyte (virtual memory  
techniques). Grappel, Robert. art 2:7 Jul77  
p78-81 \*\*\* Ion Storage / Computer  
Instruction / Virtual Memory  
Virtual memory and VSAM for micros. Dahmke,  
Mark. col 2:11 Nov77 p224 \*\*\* APL / Ion  
Storage / Virtual Memory  
Virtual memory for an object-oriented language.  
Kaehler, Ted. art 6:8 Aug81 p378-387 \*\*\*  
k / Virtual Memory

## VOICE SYNTHESIS

Apple audio processing. Cross, Mark. art L3  
5:4 Apr80 p212-218 \*\*\* Hardware  
Construction / Apple II / Audio Processing  
Articulate automata: an overview of voice  
synthesis\*. Fons/Gargagliano. art L1 6:2  
Feb81 p164-167 \*\*\*  
Build a low-cost speech-synthesizer interface.  
Clarcia, Steve. col L1 6:6 Jun81 p46-68  
\*\*\* Apple II / Hardware Construction / TRS-80  
Model I  
Build an unlimited-vocabulary speech synthesizer.  
Clarcia, Steve. col L1 6:9 Sep81 p38-50  
\*\*\* Hardware Construction / TRS-80 Model III  
Closer look at the TI Speak & Spell. Vernon,  
Peter. art 6:4 Apr81 p150-154 \*\*\* Design  
Computer speech: an update. Dahmke, Mark. col  
6:2 Feb81 p5-12 \*\*\* Handicapped  
Dissecting the TI Speak & Spell. Rigshy,  
Michael. art 5:9 Sep80 p76-84 \*\*\*  
Interface /  
Extremely low-cost computer voice response  
system. Anderson, James. art L3 6:2 Feb81  
p36-43 \*\*\* Design  
Friends, humans, and countrybots: lend me your  
ears (computer speech). Rice, B. Lloyd. art  
1:12 Aug76 p16-24 \*\*\* Design  
Functional specifications "The Home Brew Voder".  
Helmers, Carl. col 1:2 Oct75 p5 \*\*\*  
TRS-80 speaks: using BASIC to drive a speech  
synthesizer. Gargagliano/Fons. art L1 4:10  
Oct79 p113-122 \*\*\* TRS-80 Model I / Hardware  
Review /

## VOICE SYNTHESIS (CONTINUED)

Talk to me! Add a voice to your computer for \$35.  
Ciarci, Steve. col L3 3:6 Jun78 p142-151  
\*\*\* Hardware Construction / Analog/Digital  
Circuit /  
Time has come to talk. Atmar, Wirt. art 1:12  
Aug76 p26-33 \*\*\* Hardware Review  
Voice for the Apple without extra hardware.  
Payne, Robert. art L3 6:11 Nov81 p499-501  
\*\*\* Digital Audio / Apple II  
Votrax vocabulary. Gargagliano/Fons. col 6:6  
Jun81 p384-391 \*\*\* TRS-80 Model I

## WEATHER

Aids to the direct reception of weather satellite  
photographs. Johnston, William. col 5:1  
Jan80 p148-153 \*\*\*  
Do it yourself weather predictions\*. Firth,  
Michael. art 1:16 Dec76 p62-69 \*\*\*  
Control / Hardware Construction  
Graphic input of weather data. Smith, Stephen.  
art L1 4:7 Jul79 p16-30 \*\*\* Graphics /  
Input/Output / Science  
Hurricane tracking. Bailey, John. col L1 6:7  
Jul81 p120-132 \*\*\* North Star  
Sonic anemometry for the hobbyist. Dvorak, Neil.  
art L3 4:7 Jul79 p120-132 \*\*\*  
Analog/Digital Circuit / Hardware Construction

## WIRE WRAP

Hobby unwrap. Stirling, Ralph. col 4:5 May79  
p218-219 \*\*\* Hardware Construction  
One-sided view of wire wrap sockets. Rampil,  
Ira. art 2:9 Sep77 p54-55 \*\*\* Hardware  
Construction  
Photographic notes on wire wrapping. Helmers,  
Carl. art 1:5 Jan78 p58-59 \*\*\* Hardware  
Construction  
Save money using mini wire wrap. Thompson,  
Roger. art 1:8 Apr76 p80-81 \*\*\* Hardware  
Construction  
Secret of unraveling wire wrap boards. Lerseth,  
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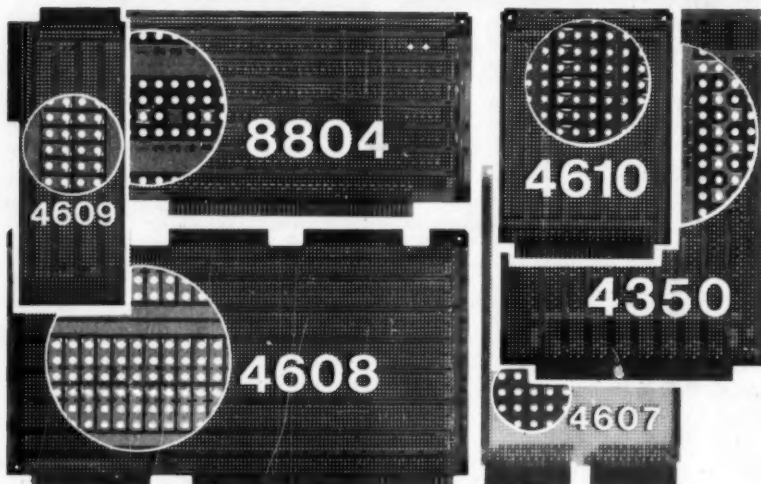
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